

Chronic Fatigue Syndrome

Definition: What is Chronic Fatigue Syndrome?

Chronic fatigue syndrome refers to long-standing fatigue, not due to any common illnesses that usually produces tiredness, but includes symptoms of impaired memory or concentration, sore throat, tender lymph nodes, muscle and joint pain, headache, sleep disorder, and post-exertion malaise. It appears to have been recognized in the past as neurasthenia, Icelandic disease, and myalgic encephalomyelitis, but whether all these are the same or somehow different is under debate by investigators. Some investigators postulate that chronic fatigue syndrome overlaps with fibromyalgia.

The definition of chronic fatigue syndrome was established in 1988 by the Centers for Disease Control (CDC) and later revised in 1994. About a tenth of 1% of the general population is considered to have chronic fatigue syndrome as based on the CDC definition. Therefore, most patients with fatigue who present to a medical clinic usually have another diagnosis that causes tiredness other than chronic fatigue syndrome.

Etiology: What Causes Chronic Fatigue Syndrome?

The cause of chronic fatigue syndrome has not been firmly established. Infectious agents have been implicated because patients often report onset of fatigue after a flu-like illness. Viruses like Epstein-Barr virus (EBV), human herpesvirus 6 (HHV-6), and enteroviruses, which infect the gut, might be candidates that cause chronic fatigue syndrome as some research suggests. EBV is known to cause infectious mononucleosis or “mono” and commonly infects many people throughout their lifetime, but most do not go on to have chronic fatigue syndrome. Research is ongoing as to a viral cause for chronic fatigue syndrome. Investigators are trying to determine whether chronic viral infection occurs and persists, to cause chronic fatigue syndrome, or whether there is chronic immune system activation following viral infection or illness onset that leads to symptoms.

It is likely that the illness involves the central nervous system. Patients with chronic fatigue syndrome note difficulty with concentration, attention, and memory as well as isolated loss of nerve function. Magnetic resonance imaging, and single-photon emission computed tomography of the brain, sometimes shows results consistent with white matter disease. Associated with chronic fatigue syndrome are abnormalities in the endocrine system with decreased corticotrophin releasing hormone secretion by the hypothalamus.

Diagnosis: How Does One Determine the Presence of Chronic Fatigue Syndrome?

There is no reliably tested laboratory or imaging procedure that one performs to determine the presence of chronic fatigue syndrome. Clinicians therefore rely on a history, physical, and the CDC diagnostic criteria. The CDC diagnostic criteria are as follows:

1. Persistent fatigue for 6 months where there is no active medical condition that may cause the fatigue such as hypothyroidism, sleep apnea, narcolepsy,

malignancy or another persistent viral infection that have not resolved such as hepatitis B or C virus.

2. Exclude patients with past or current major depression and those with bipolar disorder, schizophrenia, delusional disorders, dementias, anorexia nervosa, or bulimia nervosa.
3. Exclude patients who have had alcohol or substance abuse disorders within two years prior to chronic fatigue or anytime thereafter.
4. Chronic fatigue syndrome is diagnosed when the above criteria are met and there is a history of definite onset, not improved with rest, and there is associated decrease in activities either social, educational, occupational, or otherwise personal in nature.
5. Chronic fatigue syndrome is diagnosed when the above criteria are met and there are 4 or more of the following symptoms:
 - a. Memory or concentration difficulty
 - b. Sore throat
 - c. Tender lymph nodes in the neck or armpit
 - d. Muscle pain
 - e. Joint pain in more than one joint
 - f. New headaches
 - g. Unrefreshing sleep
 - h. Malaise after exercise

If laboratory or imaging studies are performed, it is usually done to make sure that other reasons for fatigue are not present. The National Institute of Health recommends the following tests in the case of long-standing and debilitating fatigue:

1. Complete Blood Count with White Blood Cell Differential
2. Erythrocyte Sedimentation Rate
3. Urinalysis
4. Blood Urea Nitrogen, Creatinine, and Electrolytes
5. Glucose
6. Calcium and Phosphorus
7. Thyroid Stimulating Hormone
8. Alanine Aminotransferase
9. Alkaline Phosphatase
10. Total Protein, Albumin, and Globulin

Optional tests if clinically indicated include:

1. Antinuclear Antibodies
2. Serum Cortisol
3. Rheumatoid Factor
4. Immunoglobulin Levels
5. Tuberculin Skin Testing
6. Lyme Titer
7. HIV Screening

Therapy: How Does One Treat Chronic Fatigue Syndrome?

There is no known cure for chronic fatigue syndrome. Like patients with fibromyalgia, patients with chronic fatigue syndrome have to learn how to cope with their illness. Exercise can benefit some patients with chronic fatigue syndrome, though many patients do report otherwise. Cognitive behavior therapy or attention to one's mental health may also benefit. Reports suggest that improvement in symptoms can last over 6 to 12 months following cognitive behavior therapy. Relaxation techniques can lead to limited improvement in some individuals.

Amitriptyline (Elavil™) is an anti-depressant medication which has been found to be useful in promoting sleep and reducing symptoms of chronic fatigue syndrome when taken at bedtime. Nonsteroidal anti-inflammatory agents such as ibuprofen or naproxen may help in treating the muscle and joint pain, and headaches.